

# Notice of Allowability

Application No.

10/717,877

Examiner

DUC Q. DINH

Applicant(s)

LOWLES ET AL.

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## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 03/09/07.
2. ☒ The allowed claim(s) is/are 1,3,4,7-22 rennumbered as 1-19.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 03/09/07
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.



**DETAILED ACTION**

***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 03/09/07 is being considered by the examiner.

**EXAMINER'S AMENDMENT**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Amendment to the claims:

1. (currently amended) A touchscreen liquid crystal display comprising: a liquid crystal display including a viewing surface, a liquid crystal area containing liquid crystal located behind the viewing surface, a plurality of spaced apart elongate first electrodes located on a viewing surface side of the liquid crystal area and a plurality of spaced apart elongate second electrodes located on an opposite side of the liquid crystal area, the first and second electrodes overlapping to form an array of liquid crystal pixel elements, at least some of the first electrodes being displaceable towards the second electrodes in response to external pressure applied to the viewing surface; and

a control circuit connected to the first and second electrodes for controlling the operation of the liquid crystal display and including: (i) a driver circuit for driving the electrodes for selectively controlling a display state of the pixel elements; and (ii) a measurement circuit for measuring voltages across at least some of the pixel elements and detecting displacement of the at least some of the first electrodes in response to external pressure applied to the viewing surface based on the measured voltages; and

a reference electrode in the liquid crystal display overlapping with the first or second electrodes to ~~[[from]]~~ from reference pixel elements, the measurement circuit comprising a comparison circuit for comparing the measured voltages to reference voltages measured from the reference pixel elements, wherein the reference pixel elements are located outside of a viewable area of the liquid crystal display a sufficient distance so as not to be substantially affected by external pressure applied to the viewing surface.

12. (currently amended) A method for using a liquid crystal display as a user input, the liquid crystal display having a plurality of first electrodes and a plurality of second electrodes located on opposite sides of a liquid crystal containing area, the first electrodes overlapping with the second electrodes and defining an array of liquid crystal display pixel elements, each pixel element being associated with a unique location where an associated one of the first electrodes overlaps with an associated one of the second electrodes, at least some of the first electrodes being displaceable towards the second electrodes when pressure is applied to a viewing surface of the liquid crystal display, the display having a reference electrode overlapping with the plurality of first electrodes or with the plurality of second electrodes to from reference pixel elements that are located outside of a viewable area of the liquid crystal display a sufficient

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distance so as not to be substantially affected by external pressure applied to the viewing surface, the method including:

- (a) selectively driving the first and second electrodes to cause the pixel elements to display an image visible from a viewing side of the viewing surface;
- (b) sampling voltages between the first and second electrodes;
- (c) sampling voltages between the reference electrode and the plurality of first electrodes or second electrodes that the reference electrode overlaps with; and
- (d) determining based on the sampled voltages if any of the first electrodes have been displaced towards the second electrodes.

***Reason for Allowance***

- 3. Applicant's arguments see pages 8-11 of the Remarks filed on October 30, 2006, with respect to claims 1, 3, 4, and 7-22 have been fully considered and are persuasive.
- 4. Claims 1, 3, 4, and 7-22 are allowed and renumbered as 1-19.
- 5. The following is an examiner's statement of reasons for allowance: claims 1, 3, 4, and 7-22 are allowable for the reasons argued by the applicant in the Remarks filed on October 30, 2006

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

*Conclusion*

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DUC Q. DINH whose telephone number is (571) 272-7686. The examiner can normally be reached on Mon-Fri from 8:00.AM-4:00.PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/DUC Q DINH  
Examiner  
Art Unit 262929

DQD  
June 10, 2007

